REMARKS

Applicant requests favorable reconsideration and allowance of this application in view of the following remarks.

Claims 1-14 remain pending, of which Claims 1, 4, 7, 9, 11 and 13 are independent. No claims have been amended, canceled, or added.

Claims 1, 4, 7, 9, 11, and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,427,025 to Shimomura et al. in view of U.S. Patent Publication No. 2003/0086127 to Ito and further in view of U.S. Patent Publication No. 2003/0056146 to Freeman et al. Claims 2, 3, 5, 6, 8, 10, 12, and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shimomura et al. in view of Ito and further in view of U.S. Patent 6,198,848 to Honma et al.

Applicant respectfully traverses the rejections and submits that the claims are distinguishable from the cited references for at least the following reasons.

The present invention recited in the pending claims is related to compression and decompression (decoding) of image data. An apparatus used in compressing and/or decompressing image data includes a memory of a predetermined size. When particular image data is compressed, it often is not possible to know in advance what amount of compression (i.e., compression ratio) is needed for the compressed image data to fit in the available memory. If compression is attempted at a first compression ratio and the resulting compressed image data is too large to fit in the memory, compression must be re-attempted with a different compression ratio. This problem, and conventional approaches to address it, are discussed in the background discussion of the specification at pages 3 and 4.

In one conventional approach, the original image data must be re-input to perform compression again. Since this may involve setting an original image on a scanner again, it can be cumbersome for a user, and this approach takes more time if repeated scan/compress cycles are needed. According to another conventional approach, the original image data is compressed in parallel with different compression ratios, and then the resulting compressed data that best fits in the main memory is stored in that memory. While this approach avoids the need to re-input the original image data, it requires a large amount of memory to store multiple quantization tables for different compression ratios, as well as the processing and temporary storage capacity to perform parallel compression at different compression ratios.

According to an aspect of the invention recited in the present claims, therefore, the amount of compressed image data resulting from compression is calculated and a determination is made as to whether the compressed data will exceed the capacity of a memory. If the amount of data will exceed the capacity of the memory, then the compression ratio is increased and the calculation and determination are made again. At some point, the compressed data will fit in the available memory space and the "final" compression ratio is known.

During the compression process, the number of times that amount of compressed data is determined to exceed the capacity of the memory is counted. There is a correlation between the number of such determinations and the number of times the compression ratio is increased and compression is repeated. Hence, the count corresponds to the "final" compression ratio. Decoding of the compressed image data can then be quickly and efficiently performed by decoding the data on the basis of the count of the number of times it was determined that the compressed image data exceeded the capacity of the memory. This is disclosed in the specification, for example, at least at page 44, line 11 through page 49, line 25, and particularly at page 47, line 16 through page 48, line 4 and page 49, lines 4-8 and lines 21-25.

Turning specifically to independent Claim 1, the present invention recited in that claim includes, *inter alia*, the features of (i) a counting unit which counts the number of times a determination unit determined that the data amount exceeded the capacity of the memory, (ii) a holding unit which holds the counted number of times, and (iii) a decoding unit which decodes the data stored in the memory on the basis of the number of times held by said holding unit.

Applicant submits that the cited art, whether considered individually or in combination, fails to disclose or suggest at least the features of counting the number of times it is determined that the data amount exceeds the capacity of the memory and performing decoding on the basis of the counted number of times, as recited in Claim 1.

The Office Action cites Freeman as allegedly disclosing a counting unit that counts the number of times that a determination unit determined that a data amount exceeded the capacity of a memory. Applicant submits that the cited portion of Freeman relates to a printer and, in particular, to updating statistics regarding the number of pages of a print job that are not printed or are printed incompletely due to the size of a page being larger than the fast memory capacity of a printer. Applicant submits that there is no disclosure of using such statistics in the process

of decoding image data, In particular, Applicant submits that there is no disclosure of a decoding unit that decodes stored data on the basis of the counted number of times.

Further, Applicant submits that Shimomura fails to disclose the above-mentioned feature and, in particular, fails to disclose any features relating to holding a counted number of times that a determination unit determined that a data amount exceeded the capacity of a memory and decoding stored data on the basis of the number of times. The Office Action cites to column 16, lines 38 – 40 of Shimomura. That paragraph reads as follows:

> If the process goes to step **S404** to step **S415**, CG compression is performed on the data obtained by substituting for data **1***a* of the single block held in the raster block conversion unit **1** by referring to the pixel type signal **1***b*, the compressed data is stored in the compressed data holding unit **9**, and the quantity D of compressed data obtained at that time is calculated. Next, in step **S416**, the quantity D of compressed data is compared with **64**. If they coincide with each other, it is determined that that block is a flat image and the process goes to step **S423** because such an image is more effectively compressed by ADCT. If the quantity D of compressed data is not coincident with **64**, the process goes to step **S417**.

The cited portion mentions calculating a quantity D of compressed data obtained "at that time" (i.e., at a specific point in time). It does not mention a count of a number of times that a data amount exceeds a memory capacity. In the claim language of Claim 1, "the counted number of times" is an integer representing the number of times something occurs, whereas the reference to "at that time" in Shimomura is not an integer but rather a temporal reference.

Accordingly, Applicant submits that even if the cited art is considered together, there is nothing in the record to disclose or suggest at least the claimed feature of Claim 1 to decode data stored in memory on the basis of the number of times held by a holding unit, i.e., the count of the number of times a determination unit determined that the data amount exceeded the capacity of a memory. The other independent claims recite features similar to those of Claim 1 discussed above.

In summary, Applicant submits the references cited in the Office Action, whether taken individually or collectively, do not teach or suggest the apparatus and methods recited in independent Claims 1, 4, 7, 9, 11, and 13.

Dependent Claims 2, 3, 5, 6, 8, 10, 12, and 14 set forth additional features of Applicant's invention. Individual consideration of the dependent claims is respectfully requested.

Applicant respectfully submits that all outstanding matters in the application have been addressed and that this application is now in condition for allowance. Favorable reconsideration and early passage of the application is respectfully sought.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

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